

IN THE CLAIMS:

1-6. (Cancelled)

7. (Currently Amended) A method for manufacturing a photodiode, the method comprising the steps of: forming a buffer layer, a light-absorbing layer, and an epitaxial layer in sequence on a substrate; selectively etching the epitaxial layer of an active region to form a convex-lens-shape surface; forming a dielectric layer on an upper surface of the epitaxial layer excluding the active region; performing a diffusion process using the dielectric layer as a diffusion mask to form a diffusion layer on the active region of the convex-lens-shape surface; forming a first metal electrode on an upper surface of the dielectric layer; and, forming a second metal electrode on an under surface of the substrate, wherein the step of forming a diffusion layer on the active region in a convex-lens shape is performed in more than two steps by dividing the diffusion area into more than one separate area.

8. (Original) The method according to claim 7, wherein the etching step comprises the steps of: applying a photosensitive film on the upper surface of the epitaxial layer and forming a photosensitive mask pattern on the upper surface of the epitaxial layer excluding the active region for a subsequent light exposure; and, wet etching the epitaxial layer in a lens-forming etching solution.

9. (Original) The method according to claim 8, wherein the epitaxial layer is formed from InP.

10. (Original) The method according to claim 8, wherein the lens-forming etching solution is methanol bromide.

11. (Canceled)

12. (Original) The method according to claim 7, wherein the buffer layer, light-absorbing layer, and epitaxial layer are deposited by metallo-organic chemical-vapor deposition.

13. (Original) A photodiode manufactured according to the steps cited in claim 7.

14. (Original) The method according to claim 7, wherein the diffusion layer is formed on the active region of the convex-lens shape surface by a Zn diffusion process.